

**Information Technology Career Cluster
Pre Tech Foundation Program
(CIP: PTF11)**

Name of Program: Intro to IT

Pre-Tech Foundation Program Description:

The IT field is about designing, creating, and maintaining the technological tools and systems that enable others to use computers effectively within various fields of endeavor. Expertise within the IT fields of hardware, software, and applications, programming and networking is in high demand. The CDC Information Technology cluster provides training for both students seeking to enter the IT field as a profession and for those who seek to bring solid understandings and skills into their work in other educational and career pathways.

During the first part of a two-year introductory program, students will learn skills needed in artistic and design careers (graphic arts) to create web pages as well as learn basic knowledge in desktop publishing, PowerPoint, end user computing, computer user support, product evaluation strategies and Standards, user needs analysis and assessment, installing computer systems, training computer users, documentation for computer users, computer facilities management, help desk operation, customer service skills for user support, troubleshooting computer problems, common support problems, information resources for computer user support, and design considerations and the importance of being able to present information in a clear and concise manner.

The second part of the introductory program students will be introduced to programming using the Visual BASIC programming language and computer maintenance, repair, and network support. Visual Basic is one of the most popular programming languages and is the language used for scripting in all major Microsoft products including Word, Excel, and Access. Students learn to create their own programs using a wide variety of tools. Skills covered include sequencing, recursion, graphics, animations, file structures, encoding and decoding data. Students will learn to convert decimal to binary to hexadecimal, integers, single precision and double precision numbers, co-ordinate geometry and mapping. Students build a wide variety of programs that include games, graphics and animation, data encryption, and artificial intelligence. Students also participate in after school robotics and electronics projects that use the skills learned in this class. In addition to learning computer programming skills, students will gain a comprehensive understanding of the helpdesk environment and the knowledge, skills, and abilities necessary to work in the user support industry. Students will learn problem-solving and communication skills that are very valuable when providing user support. Through hands-on exercises and case projects students will learn how to apply their knowledge and develop their ideas and skills. They will also learn how to work individually and in teams which will prepare them for today's team oriented work environment.

Vermont Approved Pre-Tech Foundational Program Competencies:

CORE Pre Tech Foundation Competencies

- A. Think Critically and Solve Problems
 - 1. Solve problems and make decisions in work-related situations
 - 2. Read for information and understanding

3. Use observation skills to analyze work-related situations
 4. Apply mathematical processes
 - 5. Apply measurement and spatial skills**
 6. Apply statistical analysis skills
 7. Analyze critical data to guide work activities
 8. Utilize scheduling techniques to ensure that jobs are completed by the state due date
 9. Demonstrate knowledge of the economy and how it functions as a whole
 10. Demonstrate knowledge of the economy as a framework within which decisions are made by individuals and groups
- B. Apply Technology
1. Demonstrate technological literacy
 2. Access/transmit information using electronic communication systems
 3. Demonstrate computer literacy
 4. Use database software in work-related situations
 5. Use word-processing software in work-related situations
- C. Communicate Effectively
1. Apply basic communication skills
 2. Apply oral communication skills
 3. Apply written communication skills
 4. Apply technical writing skills
 5. Apply listening skills
 6. Apply demonstration/Presentation skills
 7. Apply graphic communication skills
 8. Apply artistic communication skills
 - 9. Convey information through multimedia presentations**
 10. Create graphs and charts
 11. Build interpersonal relationships
- D. Manage Resources (Health and Environmental)
1. Apply self-management processes in the workplace
 2. Use reference materials to obtain information appropriate to a given problem, topic or situation
 3. Maintain/promote wellness
 4. Determine the impact of government regulations and business/industry procedures on the performance of particular work functions
 5. Implement safety procedures and programs
 - 6. Support the provision of first aid in accordance with company policy and procedures**
 7. Manage work and family responsibilities for the well-being of self and others
 8. Determine resources needed to produce a given product or provide a given service
 9. Ensure the quality of products and services
 10. Utilize an inventory control system to track supplies, materials, and equipment
 11. Make informed financial decisions
- E. Work Effectively and Responsibility
1. Demonstrate leadership
 2. Contribute to team work
 3. Demonstrate responsibility for learning
 4. Choose ethical courses of action in all work assignments and personal interactions
 5. Demonstrate the work ethic
 - 6. Comply with the confidentiality requirements of workplace policies and procedures**
 7. Apply appropriate strategies for dealing with the differences associated with diversity (e.g., racial, ethnic, gender, educational, personality, social, and age)
- F. Demonstrate Employability and manage a Career
1. Identify how personal interests, abilities, and skills relate to choosing a Career and Workforce Development Investigate career options

2. Chart career using career-planning skills
 3. Demonstrate skills needed to enter or reenter the workforce
 4. Demonstrate job-keeping skills
 5. Upgrade career skills
 6. Explore opportunities to create a business
- G. Demonstrate an Understanding of Academic Connections to Core Pre-Tech Foundational Competencies (CPFC)

FOUNDATIONAL COMPETENCY TO INCLUDE:

- H. Demonstrate an understanding of a chosen career cluster that the individual is preparing to enter 1 .Workplace behaviors, skills and personal and professional development
- Work Place Behaviors
- Maintain an acceptable attendance record.
 - Work well independently, showing pride and interest in work assignments.
 - Demonstrate aptitude for creativity.
 - Plan and perform work accurately, neatly and efficiently.
 - Show personal growth as a worker, evaluating own work.
 - Follow directions from supervisors and are willing to ask questions for clarification.
 - Develop good oral and written communication skills.
 - Cooperate with co-workers and supervisors.
 - Demonstrate teamwork as a contributing team member.
 - Demonstrates positive attitude toward work.
2. Identify common occupations found within the career cluster Develop personal career goals.
 3. A school to work experience in the chosen career cluster

Demonstrate Technical Skills within a Chosen Career Cluster – (These will be developed with center partners and will be based on the Career Cluster Program Competencies.)

Foundation Knowledge and Skills

1. Communications
 - Use oral and written communication skills in creating, expressing and interpreting information and ideas including technical terminology and information.
2. Information Technology Applications
 - Use information technology tools specific to the career cluster to access, manage, integrate and create information.
3. Problem Solving and Critical Thinking
 - Solve problems using critical thinking skills (analyze, synthesize and evaluate) independently and in teams.
4. Employability and Career Development
 - Know and understand the importance of employability skills. Explore, plan, and effectively manage careers.
5. Safety, Health, and Environmental
 - Understands the importance of health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance.
6. Leadership and Teamwork
 - Use leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.
7. Systems
 - Understand roles within teams, work units, departments, organizations, interorganizational systems and the larger environment.
8. Other Academic Foundations
 - Have the knowledge and skills required to pursue the full-range of career and postsecondary education opportunities within the Information Technology cluster. These are standards from *Framework* that

are not already specified above.

Learning Opportunities/Units

Careers and Employment Skills in Information Technology
Personal characteristics of professionals in the Information Technology cluster
Workplace safety
Basic Design – The three C’s Color, Contrast, Content
He Framed Me! – Using frames on web pages
Bodies in Motion – Simple animation
JAVA – It’s not Just
Coffee – Using Java applets
The Missing Link – Trouble shooting web links
Now We’re in Business – Designing and Creating Business Cards
Marketing . Design and creation of brochures
Presentation – Design and creation of Power Point presentations
Introduction to End-User Computing
Introduction to Computer User Support
Customer Service Skills for User Support
Troubleshooting Computer Problems
Common Support Problems
Help Desk Operation
Recursion
Graphics
Animations
File Structures
Encoding And Decoding Data
Convert Decimal To Binary To Hexadecimal
Integers
Single Precision And Double Precision Numbers
Co-Ordinate Geometry And Mapping.
Create Games, Graphics And Animation, Data Encryption
Artificial Intelligence
User Support Management
Product Evaluation Strategies and Standards
User Needs Analysis and Assessment
Installing End-User Computer Systems
Training Computer Users
Writing for End Users
Computer Facilities management

Instructional Materials and Resources Used:

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| Textbook/Resources | Publisher | Copyright |
| Teacher Developed Material – Notes and CD’s | Instructors | Current |
| A Guide to Computer User Support for Help Desk and | | |
| Support Specialists, Second Edition. Beisse | Course Technology Inc. | Current |
| Cisco Curriculum http://www.course.com | | Current |
| Internet Based Instruction Modules | | Current |

Internet:

Web sites are used for research on careers; for finding additional explanation of curriculum subject matter; for comparison of design considerations; and for examples of good and bad designs.

Assessment and Grading Policy:

Numerical – based on 100 % scale where:

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|--|-----|
| Assignment –projects, designs, presentations, etc. | 40% |
| Mid-Term and Final Exams | 40% |
| Quizzes | 10% |
| Participation | 10% |

Grading Scale:

| | |
|---------------|---|
| 90—100% | A |
| 80—89% | B |
| 70—79% | C |
| 60—69% | D |
| 59% and below | F |

Course Expectations:

Complete all assigned work on time, neatly, accurately and professionally. Participate in class discussions, problems, duties, assignments, presentation, etc. Develop and maintain a course portfolio of all material including your notes, handouts, projects, assignments, etc. Maintain a passing average or greater on all assignments, projects, presentations, etc.

Instructor Expectations:

You are expected to act in a professional manner. We all must treat everyone with respect and keep a positive attitude. Violations of the code of conduct are not expected, but if they occur they will be dealt with individually. Extra help will be made available whenever possible. If you need extra help from me or more time in the classroom to use the tools and equipment, please don't hesitate to ask and please don't procrastinate.

Family Involvement or Community Services:

Discussions about the importance and impact of business ethics, academic honest, college choices, community events and open houses and job opportunities all enhance classroom activities.